

We claim:

1. A DNA encoding a polypeptide having the amino acid sequence of a vertebrate growth hormone in which the amino acid position in said vertebrate growth hormone
5 corresponding to amino acid Gly 119 of bovine growth hormone is deleted or substituted with an amino acid, said polypeptide having growth hormone antagonist activity.
2. The DNA of claim 1, wherein the growth hormone antagonist is a polypeptide having the amino acid sequence of
10 human growth hormone in which amino acid Gly 120 is deleted or substituted with an amino selected from the group consisting of Arg, Trp, Pro, Lys and Leu.
3. The DNA of claim 1, wherein the growth hormone antagonist is a polypeptide having the amino acid sequence of
15 human growth hormone in which amino acid Gly 120 is substituted with Arg.
4. The DNA of claim 1, wherein the growth hormone antagonist is a polypeptide having the amino acid sequence of human growth hormone in which amino acid Gly 120 is
20 substituted with Lys.
5. A DNA encoding a polypeptide having the amino acid sequence of human growth hormone in which amino acid Gly 120 is deleted or substituted with an amino acid, and in which at least one other position outside the third alpha
25 helix of human growth hormone is deleted or substituted with an amino acid, said polypeptide having growth hormone antagonist activity. 2
6. The DNA of claim 5, wherein the deletion or substitution outside the third alpha helix is at a position
30 corresponding to a non-conserved amino acid of a vertebrate growth hormone selected from the group consisting of flounder, yellowtail, tuna, salmon, chicken, rat, porcine, ovine, bovine and human growth hormone.
7. The DNA of claim 5, wherein the growth hormone
35 antagonist is a polypeptide having the amino acid sequence of human growth hormone in which amino acid Gly 120 is deleted

or substituted with an amino selected from the group consisting of Arg, Trp, Pro, Lys and Leu.

8. The DNA of claim 5, wherein the growth hormone antagonist is a polypeptide having the amino acid sequence of 5 human growth hormone in which amino acid Gly 120 is substituted with Arg.

9. The DNA of claim 5, wherein the growth hormone antagonist is a polypeptide having the amino acid sequence of human growth hormone in which amino acid Gly 120 is 10 substituted with Lys.

add a4

add B6

add c1

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add D2

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add 7

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